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ABSTRACT

A study compared the effectiveness of 2 approaches for teaching students exam-writing skills. One approach--the study tips/models approach typical of existing textbook materials and study guides--used written study tips, along with sample exam questions and responses, to give students knowledge about what to do, and provide a model they could imitate in preparing for and taking exams. The other approach used inquiry activities to present data, designate a task to be performed using that data, and provide guidance in performing that task, thus giving students practice in how to do it. Inquiry activities focused on four skills: coping with the logistical constraints of the exam situation; preparing and recalling content material, analyzing the exam question; and writing a coherent essay with minimal revision. An example of one such activity describes how it was developed. Subjects, 13 classes of freshman composition at the University of Oklahoma, received 4 days of instruction using one of the 2 approaches. Comparing students' performances on essay exams before and following instruction, results showed that both kinds of instruction had a significant positive effect on students' exam scores, with average gains nearly twice as high as the study tips/models group. Findings suggest that the inquiry activities are more successful than the typical materials contained in textbooks. (SR)

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Using Inquiry to Improve Students' Critical Thinking and Writing Skills on Essay Exams

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Using Inquiry to Improve Students' Critical Thinking and Writing Skills on Essay Exams

During the past twenty years, much composition research has focused on identifying and teaching the thinking processes involved in good writing. A major aim underlying this research is to develop writing instruction which changes students' ways of thinking about and approaching a writing task, rather than to point out errors in the finished written product. Such instruction, researchers argue, should provide students with the cognitive skills needed to successfully complete writing tasks they encounter after the composition course has ended. As Linda Flower says, the writing class should "make a difference in the academic and profesional writing [students] do outside the course" (1985, p. 1). Successful students, in other words, must achieve the competence to use language appropriately in a variety of specific contexts.

Given that helping students gain the thinking skills needed to write independently is a primary goal of writing instruction, a major concern should be to identify the kinds of writing tasks students are likely to face during their educational careers and to emphasize the cognitive strategies needed to perform these tasks. What writing and thinking strategies are students likely to need? Available research suggests that much of the writing done by high school and college students takes place on essay exams. In his large-scale study of secondary schools, Arthur Applebee (1981)

found that over half of the writing students do occurs in content-area classes, and that the primary context for this writing is tests. The average amount of time students have to plan a piece of writing is less than three minutes (qtd. in Langer, 1984). Mary Meiser, a writing center coordinator, aserts that "in many high school and college courses, students' survival hinge[s] on their ability to write the essay exam (1982, p.20). The fact that writing essay exams under time pressure is a task most secondary and college students face raises an important question: Are composition instructors teaching students the thinking skills they need to succeed on this kind of task?

The answer appears to be "no." The National Assessment of Educational Progress (1981) found that although students' scores on multiple-choice and reading comprehension items were high, nearly 95% of American 17-year-olds responded inadequately to essay items on a standardized test of reading and writing ability. According to the authors of the report, "... responses to assesment items requiring explanation, criteria, analysis, or defense of a judgment... showed little evidence of well-developed problem-solving strategies or critical thinking skills" (p. 2).

It could be argued that general instruction in writing, which is already a part of composition courses, should be suficient training to enable students to write well on essay exams. Essay exams generally require students to synthesize, apply, and explain information learned in a course. Most

composition courses focus on what Randall Popken (1989) calls "paper assignments"-- writing assignments completed outside of class-- which ask students to use information in similar ways. Thus it is often assumed that the skills used in completing a typical composition paper assignment are applicable to writing an essay exam. However, the results of several studies show that even students who have succeeded in their college composition courses write inadequately in an exam situation (Keeley, 1982). This suggests that essay-exam writing requires unique skills in addition to those required for writing papers, and that writing courses are not providing students with enough help in acquiring those skills.

There are several important diferences between completing a paper assignment and writing an exam essay. First, essay exams generally require students to rely wholly on memory for content material. Students are expected to learn a body of information and to be able to recall whatever knowledge is needed to complete the essay. In a paper assignment, students may be encouraged to search their memories for topic ideas or personal knowledge but still also have access to other sources in compiling information. Also, a paper assignment allows for information gathering throughout the composing process. If, for example, a student finds that she needs more facts after writing a first draft, she simply needs to return to the library before the paper is due. Such refocusing is not allowed in an exam situation.

Thus, learning and preparing a body of information before writing, before even knowing what the writing assignment will be, is a skill unique to the essay-exam writing process. In preparing for an exam, students need to master strategies for reading critically, identifying important information, and organizing information for recall.

Second, essay-exam prompts are quite different from paper-assignment prompts. An essay-exam question is generally what cognitive psychologists H.A. Simon and John Hayes would call a "well-defined problem" (1976, p. 271). In other words, the task outlined in an exam question is usually quite specific (i.e., "List and discuss the reasons for economic decline in the South after the Civil War"). The student is asked to manipulate a very specific body of information in a very specific way. This is not often required in a paper assignment. In his 1989 study, Randall Popken found that paper assignments are usually more broadly defined (i.e., "Propose a solution to a local problem"). They are what Simon and Hayes call "fuzzy problems": students can approach the assignment in several ways, drawing on a wealth of possible information and strategies (1976, p. 271). Thus, while topic exploration is an important concern in a paper, careful analysis of the exam question is uniquely important in an essay exam. Students need to learn strategies for identifying the important elements of the exam question and for manipulating their knowledge to fit those requirements.

Third, an essay exam is written under severe time constraints which allow little revision. Though most paper assignments incorporate a deadline, the student generally has time and is encouraged to revise the paper through several drafts. Revision is a luxury for students writing essay exams; many students are lucky to finish the essay in time to proofread for surface errors. As a result, planning an exam essay must be done with the purpose of creating a first draft which is as "perfect" as possible. Paper assignments do not provide practice in this sort of planning. Students taking essay exams need assistance in streamlining the drafting process and in minimizing the rewriting needed.

Finally the essay exam sutuation poses logistical constraints not present in writing a paper. Students writing an out-of-class assignment can create a relatively comfortable schedule and environment for writing. One popular composition textbook advises students: "Arrange to write at your best time of day, when you are most relaxed, creative, and productive" (Axelrod and Cooper, 1988, p. 8). But on an essay exam, students must write well in an uncomfortable classroom environment, under intense time pressure, on a topic they have not chosen. Students who are accustomed to writing under the relatively flexible conditions allowed by paper assignments need help in adjusting to the retricted writing process of the exam situation.

To summarize, it is erroneous to assume that students automatically learn how to write essay exams by writing papers in composition courses. As Popken puts it, "Exams are not mere imitations of papers... the essay exam is a separate genre...." (1988, p. 63). Essay exams require thinking and writing processes different from those used in writing papers, and specific instruction on these processes are needed.

My research project compared the effectiveness of two approaches for teaching students exam-writing skills. One approach used written study tips, along with sample exam questions and responses, to give students a model they could imitate and preparing for and taking exams. This approach is typical of existing textbook materials and study guides on exam taking. However, this approach only provides what George Hillocks calls "declarative knowledge"-- that is, knowledge about <u>what</u> to do in the writing situation, not practice in <u>how</u> to do it (1986, p. 233). Research suggests that teaching approaches which stress declarative knowledge rather than "procedural knowledge" of <u>how</u> to perform writing tasks tend to be minimally effective in improving student performance (Hillocks, 1986, p. 233). This approach was included in the study to gauge the effectiveness of kinds of materials currently available to teachers.

The second teaching approach I studied-- inquiry-- differs from the stody tips/models approach. In inquiry instruction, to quote Hillocks, teachers "present students

with data,... designate a task to be performed using that data, and provide guidance in performing that task... until students become proficient in using the strategies required by the task" (Hillocks, 1987, p. 80). Research has shown that inquiry is twice as effective as other methods in improving many kinds of student writing (Hillocks 1986). However, mine was the first study to design inquiry activities to teach essay-exam writing, as well as the first to measure its effect on students' exam-writing skills.

The activities in the inquiry instruction focused on the four unique skills discussed earlier: coping with the logistical constraints of the exam situation, preparing and recalling content material, analyzing the exam question, and writing a coherent essay with minimal revision. These became the "basic strategies" to be taught in the unit; the unit incorporated one or more practice activities for each of these skills. Each activity was developed using Hillocks' guidelines and the existing research in that skill area. An example of the development of one activity is as follows.

An activity was needed which would teach students to cope with the logistical demands of the exam-writing situation. In designing such an activity, it was important to find out what kinds of knowledge help students deal with such situational constraints; thus looking at empirical research on testing situations was necessary.

Research by Anderson and Armbruster (1984) suggests that students who know the performance requirements of a criterion

task learn more from subsequent study than students with only vague notions about their assigned tasks. Similarly, studies on test-wiseness have found that precedural knowledge about test situations improves student performance (Slack and Porter, 1980). Applying this research to essay-exam instruction would mean that knowledge about specific logistical problems which can occur in exam situations would be valuable to students.

A scenario activity called "Exam Nightmares" was constructed to give students knowledge of these potential problems and an opportunity to generate potential solutions to them. Six scenarios were designed. Each told a brief story about a specific problem a fictional student encountered in taking an essay exam (i.e., running out of time, confronting a question which contains unfamiliar vocabulary, etc.). For each scenario, groups were to discuss: What is the problem? What are some causes of the problem? What are some solutions (both preventive and immediate) for the problem? This discussion was followed up with a writing assignment which asked students to analyze a problem they had experienced in a past exam.

This inquiry activity, like the others in the unit, used the results of empirical research in choosing the kind of information that would be most valuable to students in learning the skill. It also meets Hillocks' definition of a good inquiry activity because it provides students with data for practicing the skill, uses groups to promote student

involvement, and leads students from relying on scenarios to applying the strategy independently.

The research study involved thirteen classes of freshman composition at the University of Oklahoma, each of which received four days of instruction using one of the two approaches: study tips and models, or inquiry. Students' performance on essay exams before and following instruction were compared, looking at both the writing proficiency and the content material contained in each response. Statistical analysis using a T-test showed that both kinds of instruction had a significant positive effect on students' exam scores ($p < .005$), with average gains nearly twice as high as the study tips/models group. Because further analysis showed no significant effects for teacher difference, student gender, and pretest achievement level, these results are quite powerful.

In conclusion, essay-exam writing plays a major part in students' education and they need help developing the critical thinking and writing skills unique to this kind of writing. The inquiry activities examined in my study are one approach which seems more successful than the typical materials contained in many textbooks. However, further study is necessary to improve instruction in this important area.

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